

Flight Trimming Rubber Scale Models

by Mike Morrow- August 5, 2002 as printed in the January 2003 Issue of FACNews

It looks like we had another successful QUIET RIOT event - Lots of models, lots of events, and lots of great flights. I think there could be even more participation, but one of the stumbling blocks in getting more participation seems to be getting models to fly. Long ago, I came across a very simple formula for trimming rubber scale models. It involves just three simple steps, performed in strict order. Every time I've found myself with a model that didn't want to fly, it turned out that I'd failed to follow the formula. So; presuming you have constructed a warp-free model, here is that formula - copy it and stick it in your flight box!

STEP 1: Balance the model at 25% wing chord with the rubber motor installed.

- a) CALCULATE, MEASURE, and MARK the balance point !! DO NOT GUESS !!
- b) Wind the motor up so it is evenly distributed, and pin the prop in place.
- c) Add clay or lead till the model balances at the calculated and measured C.G.
- d) NEVER CHANGE THE BALANCE POINT AGAIN - UNLESS YOU CHANGE RUBBER SIZES OR LENGTH - THEN YOU MUST REBALANCE THE MODEL.

STEP 2: Adjust the Stabilizer to achieve a good glide with a partly wound motor.

- a) The stabilizer MUST BE ADJUSTABLE. Fix either the leading edge or the trailing edge, but leave at least one of them free to be adjusted, and have enough adjustment range to achieve the desired results - usually about 5 degrees.
- b) Add balsa shims above or below the stabilizer to achieve the required adjustment fo a good glide.
- c) When a good glide has been achieved, NEVER TOUCH THE STABILIZER AGAIN!

STEP 3: MAKE ALL FLIGHT ADJUSTMENTS WITH THRUST LINE CHANGES.

- a) During construction, build 3 degrees down thrust and 3 degrees right thrust into the nose block of the model.
- b) Make sure you have room for further thrust line adjustment - the propeller should not hit the cowl, and there should be room inside the nose for the prop hook and a knotted rubber motor. Keep it simple - stay away from gimmicky thrust adjusters. Use small balsa shims glued in place for additional thrust adjustment if required.
- c) Adjust the model so that it does NOT fly around in a fast left bank. Fast left banks gain you no altitude, and waste the high-thrust portion of your motor run.
- d) Start with 500 turns and observe the model. Correct left banks with right thrust. Correct stalls with downthrust. When you have a smooth flight, move up to 700 turns. Again - adjust for smooth flight with thrust adjustments. Move up to 900 turns and repeat. Continue until you reach maximum turns. You MUST test at maximum turns so you aren't surprised under contest conditions!

Continue to Check the model for warps during the testing process - Most models are tested on sunny days, and warps can appear where none previously existed after exposure to the sun. Wing warps can sometimes be counteracted with small paper tabs. Stabilizer and tail warps usually require building a new part, so make every effort to make sure they aren't warped to start with! If you've got a model that just does not want to fly, see me on the field, and I'll try to help! (Ed. Comment: Don't we wish —in Pensacola!!)

SO NOW YOU KNOW THE SECRET TO SUCCESSFULLY FLIGHT-TRIMMING A RUBBER SCALE MODEL - GET OUT THERE A BUILD A BUNCH OF NEW ONES!!! BUILD—FLY -- WIN II — F. - A. - C. !!